AMENDED CLAIMS

1. A method for producing basalt fibers, comprising the steps of:

preheating basalt;

introducing the preheated basalt into a melting furnace;

heating the basalt in a firing space within said furnace to form a glass mass;

providing the glass mass to a stabilizing section of the melting furnace, which stabilizing section is of a lesser height than the firing space and has an interior that opens out to the firing space, until the glass mass reaches a fiber manufacturing temperature, and then, introducing the glass mass from the stabilizing section into a feeder by passing the glass mass through a feed port extending between an interior surface of said stabilizing section and the feeder and retaining the glass mass in the feeder to obtain a glass mass having the composition

$$\frac{Al_2O_3 + SiO_2}{CaO + MgO} \geq 3$$

$$\frac{FeO}{Fe_2O_3} \geq 0.5$$

$$\frac{2Al_2O_3 + SiO_2}{2\,Fe_2O_3 + FeO + CaO + MgO + K_2O + Na_2O} > 0.5; \text{ and}$$

forming fibers by pulling the glass mass from spinnerets which receive glass from the feeder.

8. Apparatus for producing basaltic fibers, comprising

a basalt receiver;

a melting furnace having a firing space and a stabilizing section with the stabilizing section being of lesser height than the firing space and the stabilizing section opening out to the firing space;

a heat exchange connecting the basalt receiver to the firing space for preheating basalt which is charged into the melting furnace;

a feeder which receives molten glass from the melting furnace, said feeder being connected by the stabilizing section to the firing space by way of a port opening extending from an interior surface of said stabilizing section to said feeder;

spinnerts which receive molten glass from the feeder; and

mechanisms which pull fibers from the spinnerets.

21. (New) A method according to claim 1 wherein the glass mass is retained in the feeder to obtain a glass mass having the composition

$$\frac{Al_2O_3 + SiO_2}{CaO + MgO} \geq 3$$

$$\frac{FeO}{Fe_2O_3} \geq 0.5$$

$$\frac{2Al_2O_3 + SiO_2}{2Fe_2O_3 + FeO + CaO + MgO + K_2O + Na_2O} \geq 1.5.$$

23. (New) A method according to claim 21 further comprising heating the glass mass while in each of said firing space, stabilizing section and feeder, and wherein heating is carried out with heaters provided in each of said firing space, stabilizing section and feeder.

23. (New) A method according to claim 22 wherein the glass mass is retained in said stabilizing section at a temperature of t melt + (50 to 250°C) wherein t melt is the basalt melting temperature.

24. (New) A method according to claim 23 wherein heating in said firing space is carried out to achieve a glass mass temperature of 1450°C ± 50°C, and heating is carried out in said feeder to maintain a glass mass temperature range of 1250-1450°C.

25. (New) A method according to claim 21 wherein providing the glass mass to the stabilizing section includes feeding the glass mass to a stabilizing section having an interior height that is .4 to .6 times the firing space height.

26. (New) A method according to claim 1 wherein providing the glass mass to the stabilizing section includes feeding the glass mass to a stabilizing section having an interior height that is .4 to .6 times the firing space height.